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ABSTRACT

This is the second of two reports dealing with the residential mobility patterns of children attending an urban elementary public school in Toronto, Canada. The present study aimed to discover whether a significant relationship exists between residential mobility and academic achievement. Children of the 158 parents interviewed for the study were divided into three mobility groups. Results obtained from the parent interviews and from examination of student records do not support the thesis that mobility, in and of itself, affects significantly, the academic performance of elementary school children. Findings indicate that the relationship between past mobility and overall academic performance is significant only among the Anglo-Saxon subgroup of the sample, suggesting that the reasons for which people move are more important than the move itself. The authors conclude that while achievement motivation may in some cases be associated with mobility, it may also be associated with a conflict in the home environment.
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MARKS AND MOBILITY
IN A DOWNTOWN SCHOOL

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MARKS AND MOBILITY IN A DOWNTOWN SCHOOL

INTRODUCTION

This is the second of two reports dealing with the residential mobility of children attending Duke of York Public School in downtown Toronto. The first report examines some of the relationships between the past mobility of the families of these children and certain non-academic variables.* It presents a simple formula enabling school personnel to predict which pupils would likely move within one year. The next step is to examine the relationship between past mobility and academic achievement.

As was mentioned in Patterns of Parental Mobility in an Inner-City Toronto School, much of the literature on the subject of geographical mobility among school children has been inconclusive. Two separate questions may be considered:

- (1) Is there a significant difference between the intelligence of mobile children and the intelligence of non-mobile children, as measured by group intelligence tests?
- (2) Is there a significant difference between the academic achievement of mobile children and non-mobile children, as measured by letter-grades earned in the various subjects?

Regarding the first question, Beach and Beach (1937), Smith (1943), Downie (1953), and Wickstrom (1967) found no statistically significant relationship between intelligence and residential mobility. However, Bollenbacher (1962) in his study of 5578 grade six pupils in Cincinnati writes that "...pupils included in this study who moved most often were consistently the least capable, as measured by a group intelligence test."

* Patterns of Parental Mobility in an Inner-City Toronto School (Toronto: Board of Education for the City of Toronto, 1967).

Nor is there agreement regarding the second question. Tetreau and Fuller (1942) found that mobility has "some relation" to school achievement. Nyberg (1956) found a significant relationship between mobility and marks received in Social Studies, though not in Reading, Literature, Language, Mathematics and Science. Brockman and Reeves (1967), in their study of 1341 pupils enrolled in the Edmonton Separate School System in June of 1964, flatly conclude that there is a causal relationship between mobility and achievement: "Transiency affects the achievement of students, particularly girls, at all levels of ability."

On the other hand, Bollenbacher in the study already referred to writes that "...achievement in reading and arithmetic as measured by standardized tests was not affected by...mobility..." Huus (1945) agrees that there is no significant relationship between residential mobility and reading achievement. Both the Canadian Educational Association (1965) and Wickstrom (1967) report that the incidence of grade repetition among mobile students is quite low.

The aim of the present study is to discover whether there exists a significant relationship between residential mobility and achievement in the sample studied here. If such a relationship is found, it must be asked whether there is evidence to indicate that the relationship is a causal one -- whether high residential mobility causes a child to perform poorly in school.

RESEARCH DESIGN AND PROCEDURE

The main research instrument for this study is a questionnaire, reproduced in Appendix A of Patterns of Parental Mobility in an Inner-City Toronto School. Of the children attending Duke of York Public School, 358 were selected and attempts were made to interview their parents. Of these, 158 usable parent-interviews were obtained. These interviews were conducted during Summer vacation, 1966.

One year later, in the late Spring of 1967, school records were examined to determine which families had changed their addresses since being interviewed. These data made it possible for a tentative prediction formula to be established, allowing school personnel to pinpoint the children likely to move within one year.

Beginning with the Fall of 1967, the Ontario School Record files of the 158 children whose parents were successfully interviewed were examined. The letter grades obtained by these children in the subjects of reading, writing, spelling, composition, mathematics, science, art and music from 1960-61 to 1964-65 were recorded and related to the children's history of residential mobility.

Previously, the children had been divided into three mobility groups. Children from families which reported having lived at the same address during the five years preceding the survey were classified as Stable; those from families which reported having lived at two addresses, as Intermediate; those from families which reported having lived at three or more addresses, as Mobile. On this basis, 58 children (37%) were placed in the Stable group; 49 children (31%) in each of the Intermediate and Mobile groups. For 2 children (1%) no information was available. The mobility classification just described has been maintained in the present study.

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RESULTS

Relationships Between Past Mobility and Non-academic Variables

It has already been established in Patterns of Parental Mobility in an Inner-City Toronto School that mobility is related to a number of non-academic variables, among them the ethnic origin of the parents, the type of residence occupied by the family, the number of people with whom the parents discuss their child's school progress, and the parental attitude toward their child's school. As has been outlined in the section of this report dealing with research design and procedure, the sample on which this study is based is divided into three sub-groups according to past mobility. In this section of the report, the following questions will be answered:

- (1) Is there a significant relationship between past mobility and sex distribution? (Table 1)
- (2) Is there a significant relationship between past mobility and distribution by grade level? (Table 2)
- (3) Is there a significant relationship between past mobility and the number of absences during the year immediately preceding the survey? (Tables 3 and 4)
- (4) Is there a significant relationship between past mobility and the number of times children were late for school during the year immediately preceding the survey? (Tables 5 and 6)

The answers are based on a number of tables, which are presented below. Brief comments follow each table. The level of confidence defining a significant relationship is .05.

Although the total sample includes 158 children, none of the following tables present data on the full sample. For example, Table 1 presents data on 154 children. Of the four children not included, two have been excluded for lack of information regarding past mobility while the remaining two have been excluded because their sex had not been recorded.

TABLE 1
RELATIONSHIP BETWEEN PAST MOBILITY AND SEX DISTRIBUTION (154 PUPILS)

Sex	Past Mobility			Totals
	Mobile	Intermediate	Stable	
Male	29	26	34	89
Female	19	21	25	65
Totals	48	47	59	154

Chi-Square = 0.25

Not Significant

Table 1 shows that the sex distributions of the three mobility groups are not significantly different from each other. The composition of the full sample is about fifty-eight per cent male and forty-two per cent female; each sub-group has similar percentages of boys and girls.

In other words, the moving histories of the parents of boys are similar to the moving histories of the parents of girls. Patterns of parental mobility are not related to the sex of the offspring.

TABLE 2

RELATIONSHIP BETWEEN PAST MOBILITY AND GRADE DISTRIBUTION
(143 pupils; 11 pupils in opportunity classes were omitted)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
Kindergarten and Grade 1	15	17	17	49
Grade 2	10	6	9	25
Grade 3	4	7	5	16
Grade 4	8	6	13	27
Grade 5	7	5	14	26
Totals	44	41	58	143

Chi-Square = 6.68

Not Significant

Table 2 shows that the grade distributions of the three mobility sub-groups are similar to each other. Although the staff at Duke of York Public School had noted that families with young children tend to move more often than families with older children, and although the Stable group includes a somewhat higher proportion of children in grades four and five than do either of the other groups, the differences in the grade distributions of the three sub-divisions of this sample are not statistically significant.

TABLE 3

RELATIONSHIP BETWEEN PAST MOBILITY AND NUMBER OF DAYS
ABSENT DURING LAST COMPLETED SCHOOL YEAR (152 pupils)

Days Absent	Past Mobility		
	Mobile	Intermediate	Stable
No days	4	7	10
One day	6	4	6
Two days	6	2	6
Three days	1	2	4
Four days	3	6	2
Five days	2	6	5
Six days	4	0	1
Seven days	4	1	2
Eight days	1	1	1
Nine days		1	2
Ten days	4	0	2
Over ten days	12	16	17
Totals	48	46	58

Table 3 shows the patterns of absence for each of the three mobility sub-groups during the year immediately preceding the survey. The expected values for most cells of this table are extremely small -- less than five. For that reason, the table must be collapsed before a chi-square analysis can be undertaken (see Table 4 below).

TABLE 4

RELATIONSHIP BETWEEN PAST MOBILITY AND NUMBER OF DAYS
ABSENT DURING LAST COMPLETED SCHOOL YEAR (152 pupils; collapsed)

Days Absent	Past Mobility			Totals
	Mobile	Intermediate	Stable	
No days	4	7	10	21
One to ten days	32	23	31	86
Over ten days	12	16	17	45
Totals	48	46	58	152

Chi-Square = 3.68

Not Significant

Table 4 is Table 3 after collapsing; three categories for absences have been established in order to obtain expected values for the cells which are large enough for chi-square analysis.

No statistically significant differences with respect to the number of days which the children were absent from school appear among the three sub-groups. The history of parental mobility does not appear to be significantly related to the number of days which the child is absent.

TABLE 5

RELATIONSHIP BETWEEN PAST MOBILITY AND THE NUMBER OF
LATENESSES DURING THE LAST COMPLETED SCHOOL YEAR (152 pupils)

Times Late	Past Mobility		
	Mobile	Intermediate	Stable
Never	31	32	43
Once	6	3	6
Two times	3	4	4
Three times	2	5	1
Four times	2	0	0
Five times or more	4	2	4
Totals	48	46	58

Table 5 shows the patterns of lateness for each of the three mobility sub-groups of the sample. Although this table is not suitable for chi-square analysis without combining some of the cells in order to obtain larger expected values, it can be seen that the majority of pupils in each sub-group have not been late for school during the year preceding the survey. For a collapsed table with chi-square analysis, see Table 6 below.

TABLE 6

RELATIONSHIP BETWEEN PAST MOBILITY AND THE NUMBER OF
LATENESSES DURING THE LAST COMPLETED SCHOOL YEAR (152 pupils; collapsed)

Times Late	Past Mobility			Totals
	Mobile	Intermediate	Stable	
Never	31	32	43	106
Once or more	17	14	15	46
Totals	48	46	58	152

Chi-Square = 1.14

Not Significant

Table 6 is a collapsed version of Table 5; all cases of lateness in a given mobility group have been combined in a single category. The result is that no significant relationship between lateness and previous mobility emerges; approximately the same proportion of pupils in each sub-group have a record of lateness for the year preceding the survey.

The conclusions of this section are as follows:

- (1) There is no significant relationship between past mobility and the sex distributions of the three sub-groups. (Table 1)
- (2) There is no significant relationship between past mobility and the distributions of the three sub-groups by grade level. (Table 2)
- (3) There is no significant relationship between past mobility and the number of absences during the year immediately preceding the survey. (Tables 3 & 4)
- (4) There is no significant relationship between past mobility and the number of latenesses during the year immediately preceding the survey. (Tables 5 & 6)

In other words, none of the three mobility sub-groups contains a disproportionate number of pupils of one sex or grade level, nor does any sub-group include an exceptionally large number of pupils in one of the categories for lateness or absence. If it should be found that there exists a significant difference in the distribution of letter grades among the three sub-groups, there will be no reason to attribute such a difference to differences in sex distribution, grade distribution, lateness or absence.

Relationships Between Past Mobility and Letter Grades

The major objective of this report is to establish whether there exist significant relationships between the amount of past residential mobility among the families composing the sample and the letter grades received by the children of these families. By examining each subject area (reading, arithmetic, etc.) for such a relationship, it is hoped that a clearer idea of the connexion between mobility and academic performance as measured by letter grades can be obtained.

Thus, in this section, the overall relationship between past mobility and letter grades earned in all subjects is examined first (Table 7). Then, the relationships between past mobility and letter grades received in each subject are presented (Tables 8 through 21). If a relationship is significant at the .05 level of confidence, it is reported as such. If a relationship is not significant, or if too many of the cells have extremely small values, some of the categories will be combined (collapsed) in an effort to obtain a significant relationship. If no significant relationship is found, this fact will be reported.

It should be noted that if the data regarding the children's histories of mobility are correct, all grades earned by children in the Stable group will have been obtained at Duke of York Public School. Among the children in the Intermediate and Mobile groups, a large proportion of the grades earned may have been received at other schools.

Again, the tables following present data on only part of the total sample of 158. Forty-nine children were in Kindergarten or Grade 1 and had not yet been given any grades whatsoever. The history of past mobility could not be determined for two children, while for two others no grades were available. Of the remaining 105 children, all have received grades in some subjects; but no single subject includes grades of all 105 children.

TABLE 7

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
IN ALL SUBJECTS* (1750 letter grades earned by 105 pupils)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	44	35	93	172
B	106	101	139	346
C	268	213	349	830
D	123	69	90	282
E	44	38	38	120
Totals	585	456	709	1750

Chi-Square = 34.42

Level of Significance <.05

* Including reading, writing, spelling, composition, mathematics, science, art and music.

Table 7 shows that there exists a significant relationship between past mobility and letter grades earned in all subjects. Generally, high mobility is related to a greater number of D's and E's earned. Only 18% of the grades earned by the pupils in the Stable group are D's or E's. In the Intermediate group, the percentage of D's and E's moves up to 23%, while in the Mobile group it reaches 29%.

TABLE 8

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN READING (103 pupils, 279 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	7	4	17	28
B	13	16	19	48
C	25	27	50	102
D	35	17	20	72
E	8	6	15	29
Totals	88	70	121	279

Chi-Square = 19.40

Level of Significance $< .05$

Table 8 shows a significant relationship between past mobility and letter grades received in reading. Almost half of the grades received by the Mobile group (49%) consisted of D's and E's, while only about three-tenths of the grades received by the Stable group (29%) were in this range. High mobility is significantly related to poor performance in reading.

TABLE 9

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER
GRADES RECEIVED IN SPELLING (74 pupils, 178 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	1	7	14	22
B	13	13	16	42
C	15	12	21	48
D	13	7	15	35
E	14	10	7	31
Totals	56	49	73	178

Chi-Square = 14.21

Not Significant

Table 9 shows that the relationship between past mobility and grades received in spelling does not attain significance. However, a significant relationship emerges upon collapsing (see Table 10 below).

TABLE 10

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN SPELLING (74 pupils, 178 grades; collapsed)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	1	7	14	22
B, C	28	25	37	90
D	13	7	15	35
E	14	10	7	31
Totals	56	49	73	178

Chi-Square = 13.74

Level of Significance $\leq .05$

This table shows that when B's and C's are combined into a single category, the relationship between past mobility and letter grades received in spelling is statistically significant. Fewer than two per cent of the grades earned by children in the Mobile group are A's; almost one-fifth of the grades earned by children in the Stable group (19%) are A's. Fully one-quarter of the grades earned by the Mobile children are E's; less than one-tenth of the grades of Stable children are E's. Children in the Mobile group receive more E's and fewer A's than children in the Stable group.

The grades of the children in the Intermediate group range between those of the other two groups.

TABLE 11

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN WRITING (103 pupils, 282 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	10	5	13	28
B	20	14	25	59
C	43	38	51	132
D	22	17	18	57
E	4	1	1	6
Totals	99	75	108	282

Chi-Square = 5.99

Not Significant

There is no significant relationship between past mobility and letter grades received in writing; no attempts to collapse Table 11 above show any significant relationship. The distributions of letter grades in the three mobility sub-groups are similar.

TABLE 12

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES RECEIVED
IN COMPOSITION (71 pupils, 164 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	4	3	7	14
B	6	10	12	28
C	21	16	36	73
D	15	7	9	31
E	6	7	5	18
Totals	52	43	69	164

Chi-Square = 10.02

Not Significant

Table 12 shows that the relationship between past mobility and letter grades received in composition is not significant. However, a significant relationship may be obtained by collapsing some of the categories in the above table (see Tables 13 and 14 below).

TABLE 13

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN COMPOSITION (71 pupils, 164 grades; collapsed)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A, B, C	31		84	115
D, E	21		28	49
Totals	52		112	164

Chi-Square = 4.01

Level of Significance $< .05$

TABLE 14

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN COMPOSITION (71 pupils, 164 grades; collapsed)

Grade	Past Mobility		Totals
	Mobile and Intermediate	Stable	
A, B, C	60	55	115
D, E	35	14	49
Totals	95	69	164

Chi-Square = 5.23

Level of Significance $< .05$

Tables 13 and 14 above show significant relationships between past mobility and grades received in composition. Children in the Mobile group are significantly less likely to obtain A's, B's and C's and significantly more likely to receive D's and E's than children in the combined Intermediate and Stable groups (Table 13).

Children in the combined Mobile and Intermediate groups are also significantly less likely to receive A's, B's and C's and significantly more likely to receive D's and E's than children in the Stable group (Table 14).

TABLE 15

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN MATHEMATICS (104 pupils, 301 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	11	6	28	45
B	25	18	21	64
C	40	35	57	132
D	17	11	9	37
E	7	10	6	23
Totals	100	80	121	301

Chi-Square = 19.58

Level of Significance $< .05$

As Table 15 shows, past mobility is significantly related to grades received in mathematics. Of the grades earned by children in the Mobile group 36% were A's or B's and 40% of the grades of the Stable group fell into this range. However, almost one-quarter (24%) of the grades of children in the Mobile group consisted of D's or E's, while only 12% of the grades of the children in the Stable group consisted of D's or E's.

In short, high mobility is related to a high proportion of low grades in mathematics.

TABLE 16

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER
GRADES RECEIVED IN SCIENCE (58 pupils, 99 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	1	3	5	9
B	9	7	6	22
C	22	8	21	51
D	4	1	4	9
E	3	2	3	8
Totals	39	21	39	99

Because a number of the cells in Table 16 have expected values of less than five, this table must be collapsed before chi-square analysis can be made (see Table 17 on the next page).

TABLE 17

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN SCIENCE (58 pupils, 99 grades; collapsed)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A, B	10	10	11	31
C	22	8	21	51
D, E	7	3	7	17
Totals	39	21	39	99

Chi-Square = 3.39

Not Significant

This is Table 16 after collapsing; the expected values now permit chi-square analysis. However, the relationship between past mobility and letter grades obtained in science is not significant in this sample; the distributions of grades in all three mobility sub-groups are similar to each other. No other attempts to collapse Table 16 indicate a significant relationship.

TABLE 18

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN ART (93 pupils, 217 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	6	2	6	14
B	12	8	18	38
C	50	42	57	149
D	5	4	5	14
E	1	1	0	2
Totals	74	57	86	217

The number of cells with expected values of less than five is too great in Table 18 above to permit chi-square analysis: see Table 19 on page 24 for a collapsed Table.

TABLE 19

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN ART (93 pupils, 217 grades; collapsed)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A, B	18	10	24	52
C	50	42	57	149
D, E	6	5	5	16
Totals	74	57	86	217

Chi-Square = 2.32

Not Significant

Table 19 is Table 18 after collapsing. It shows no significant relationship between past mobility and letter grades received in art. The three mobility sub-groups have similar grade distributions. No other attempts at collapsing Table 18 indicate a significant relationship.

TABLE 20

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN MUSIC (101 pupils, 228 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	4	5	3	12
B	6	15	22	43
C	52	35	56	143
D	12	5	10	27
E	1	1	1	3
Totals	75	61	92	228

Table 20 shows the relationship between past mobility and letter grades received in music. Again, too many of the cells in this table have expected values of less than five; chi-square analysis can only be made after collapsing (see Table 21 on page 26).

TABLE 21

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES
RECEIVED IN MUSIC (101 pupils, 228 grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A, B	10	20	25	55
C, D, E	65	41	67	173
Totals	75	61	92	228

Chi-Square = 7.74

Level of Significance $\leq .05$

Table 21 is Table 20 after collapsing. Now, a significant relationship between past mobility and grades received in music is evident -- children in the Mobile group are much less likely to receive A's or B's than children in either of the other two groups. Surprisingly, the Intermediate group has proportionately more A's and B's, than the Stable group which suggests that this significant relationship must be viewed with caution as the pattern of grades is not consistent with the pattern of mobility.

The conclusions of this section are as follows:

- (1) The overall academic performance of children as measured by the sum total of letter grades in reading, writing, spelling, composition, mathematics, science, art and music is significantly related to the children's histories of mobility (Table 7).
- (2) In individual subjects, past mobility is significantly related to letter grades received in reading, spelling, composition, mathematics and music (Tables 8, 10, 13, 14, 15 and 21).
- (3) Past mobility is not related significantly to letter grades received in writing, science and art (Tables 11, 17 and 18).

These findings, of course, apply to the sample which is the basis of this study. The extent to which they are applicable beyond this study-population remains to be determined.

Ethnic Origin and the Relationships Between Mobility and
Academic Performance as Measured by Letter Grades

It was already noted in Patterns of Parental Mobility in an Inner-City Toronto School that the moving habits of families in which either or both of the parents was born in a non-Anglo-Saxon country differ from the moving habits of families in which both parents are Anglo-Saxon. Given this fact, the question at once arises whether the relationships between mobility and academic performance might differ with different ethnic groups.

Unfortunately, the sample is too small to make detailed distinctions as to ethnic origin. Accordingly, the rather broad ethnic classification adopted in Patterns of Parental Mobility in an Inner-City Toronto School has been maintained here: families in which both parents were born in either Canada, the United States, or the United Kingdom are classified as "Anglo-Saxon," while families in which either or both of the parents were born elsewhere are classified as "non-Anglo-Saxon."

Among the sample as a whole, a significant relationship has been shown to exist between past mobility and letter grades received in all subjects (Table 7). The purpose of this section is to determine whether a similar relationship exists for each of the two ethnic sub-groups of the sample. The following questions will be answered here:

- (1) Is there a significant relationship between past mobility and overall academic performance as measured by letter grades received in all subjects among the children of Anglo-Saxon parents? (Table 22)
- (2) Is there a significant relationship between past mobility and overall academic performance as measured by letter grades received in all subjects among the children of the non-Anglo-Saxon parents? (Table 23)
- (3) In each of the three mobility sub-groups, is there a significant relationship between the overall academic performance of the children of Anglo-Saxon parents and the children of non-Anglo-Saxon parents? (Tables 24, 25 and 26)

In this section, only the overall performance of the pupils is considered. The number of grades earned by the non-Anglo-Saxon children in the sample is too small to allow separate analysis in each subject area. ✓

Although a number of tables in the preceding parts of this report have been collapsed, no such collapsing is undertaken here. Previously, the aim has been only to examine each table by itself; there has been no direct comparison among the relationships shown in the various tables. In this part, however, the aim is to compare different relationships. For that reason it has been necessary for all tables, each of which expresses a different relationship, to have the same form. This would not be the case if some tables were collapsed while others were not, or if tables were to be collapsed in various ways, e.g. if some letter grade categories were combined in one table and some mobility categories in another table.

TABLE 22

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES RECEIVED IN ALL SUBJECTS (Anglo-Saxon pupils only; 70 pupils, 1249 letter grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	34	28	43	105
B	85	76	80	241
C	228	179	183	590
D	113	54	54	221
E	40	34	18	92
Totals	500	371	378	1249

Chi-Square = 25.35

Level of Significance <.05

TABLE 23

RELATIONSHIP BETWEEN PAST MOBILITY AND LETTER GRADES RECEIVED IN ALL SUBJECTS (non-Anglo-Saxon pupils only; 35 pupils, 501 letter grades)

Grade	Past Mobility			Totals
	Mobile	Intermediate	Stable	
A	10	7	50	67
B	21	25	59	105
C	40	34	166	240
D	10	15	36	61
E	4	4	20	28
Totals	85	85	331	501

Chi-Square = 11.99

Not Significant

Table 22 shows that there is a significant relationship between mobility and academic performance among the children from Anglo-Saxon families.

Table 23 shows no such significant relationship among the children of non-Anglo-Saxon families.

It might be tempting to conclude from this that while mobility causally affects the academic performance of one ethnic group, it does not causally affect the academic performance of the children from another ethnic group. Such a conclusion, however, is not justified on the basis of the available evidence. An alternative explanation of the ethnic differences in this respect will be proposed in the final section of this report.

Some preliminary questions, however, must be answered first. The ethnic differences in the relationship between mobility and academic performance for the two ethnic groups must be analyzed more closely. Is ethnicity related to academic performance among the children in the Mobile group? The Intermediate group? The Stable group? Tables 24, 25 and 26 provide the answers to these questions.

TABLE 24

RELATIONSHIP BETWEEN ETHNIC ORIGIN AND LETTER GRADES RECEIVED
IN ALL SUBJECTS (Mobile pupils only; 34 pupils, 585 grades)

Grade	Ethnic Origin		Totals
	Anglo-Saxons	Non-Anglo-Saxons	
A	34	10	44
B	85	21	106
C	228	40	268
D	113	10	123
E	40	4	44
Totals	500	85	585

Chi-Square = 9.90

Level of Significance $< .05$

TABLE 25

RELATIONSHIP BETWEEN ETHNIC ORIGIN AND LETTER GRADES RECEIVED
IN ALL SUBJECTS (pupils of Intermediate mobility only; 29 pupils, 456 grades)

Grade	Ethnic Origin		Totals
	Anglo-Saxons	Non-Anglo-Saxons	
A	28	7	35
B	76	25	101
C	179	34	213
D	54	15	69
E	34	4	38
Totals	371	85	456

Chi-Square = 5.62

Not Significant

TABLE 26

RELATIONSHIP BETWEEN ETHNIC ORIGIN AND LETTER GRADES RECEIVED IN ALL
SUBJECTS (Stable pupils only; 42 pupils, 709 grades)

Grade	Ethnic Origin		Totals
	Anglo-Saxons	Non-Anglo-Saxons	
A	43	50	93
B	80	59	139
C	183	166	349
D	54	36	90
E	18	20	38
Totals	378	331	709

Chi-Square = 5.14

Not Significant

There is no significant difference between the academic performance of Anglo-Saxon children and non-Anglo-Saxon children in either the Intermediate group (Table 25) or the Stable group (Table 26). Only among the Mobile group can a significant difference be found (Table 24). This finding suggests that there are some additional important differences between Mobile Anglo-Saxons and Mobile non-Anglo-Saxons, and that these differences do not exist in the Intermediate or Stable groups.

Another way of stating this is to say that one sub-group (the mobile Anglo-Saxons) differs from one other sub-groups.

SUMMARY AND CONCLUSIONS

The main findings of this report are as follows:

- (1) For the sample as a whole, there exists a significant relationship between past mobility and academic performance in all subjects.
- (2) For the sample as a whole, a significant relationship between past mobility and academic performance exists in each of the following subjects: reading, spelling, composition, mathematics and music. No such relationship exists in writing, science and art.
- (3) The significant relationships listed in (1) and (2) above do not appear to result from skewed sex distributions, grade distributions, or distributions of lateness and absence among the three mobility groups.
- (4) The relationship between past mobility and overall academic performance is only significant among the Anglo-Saxon sub-group of the sample. It is not significant among non-Anglo-Saxons.
- (5) In the Stable and Intermediate mobility groups, no significant differences between the overall academic performances of the Anglo-Saxon sub-group and the non-Anglo-Saxon sub-group are found. Only in the Mobile group is there a significant difference between the academic performance of Anglo-Saxon children and non-Anglo-Saxon children.

These findings do not support the thesis that mobility, in and of itself, is sufficient to affect significantly the academic performance of elementary school children. If mobility were a sufficient cause of lower marks, the academic performance of mobile Anglo-Saxon children and mobile non-Anglo-Saxon children would be similarly affected. This is not the case.

Not all the findings of this report can safely be generalized beyond the study population. It can be assumed that high mobility does not cause poor academic performance in children. In some segments of the population, however, high mobility is associated with poor academic performance.

Perhaps the reasons for which people move are more important than the moving itself. Some are evicted; some move because a raise in pay has made better housing affordable; some move to avoid bill collectors; some move when they have saved a down payment to buy a house; others move to a new job in another city. (Not all these reasons generate high mobility.) The point is that people move for different reasons. Sometimes the reasons for a change in residence are compatible with high academic performance. At other times, there may be a conflict between home environment and academic performance.

This reasoning would explain the ethnic differences noted in this report. One theory which suggests itself is that the small sub-group of mobile Anglo-Saxons contains many families who do not encourage achievement; conversely the mobile non-Anglo-Saxons may be achievement-oriented, and indeed this may be one of the reasons for their moving. Such reasoning would likely hold only among inner-city families such as those studied here. Without considering ethnicity, a testable hypothesis is that the presence of domestic security and achievement motivation in a home will be associated with good academic performance. The reader will see that mobility can in some circumstances be associated with achievement motivation, and in other situations the converse would be true.

If this theory is correct, then there are at least two possible approaches to helping mobile children with poor academic records.

The first approach would be to change the home environment. Such a course is clearly difficult; care must be taken to preserve the privacy of the home. However, fully acceptable steps toward bringing about changes in the home are available. One of these is to build more public housing -- there is convincing evidence that when people move into public housing, their living patterns change as well (cf. Patterns of Parental Mobility in an Inner-City School).

A second approach to helping highly mobile children with poor academic records would be to change the school to reduce, as much as possible, conflicts between school environment and home environment. Perhaps, in these homes, attempts to achieve are held in low esteem; certainly marks as opposed to learning make a convenient reference point for acclaim and derision. Since the first data for this report were collected, the staff of Duke of York Public School have taken many steps to recognize the varieties of home environments. Marks have now been abolished; it is quite possible that marks are one of the focal points of the conflict postulated here between home and school. In this respect, Duke of York has already gone beyond this report. A study based on marks would not now be possible.

These two ways, of course, are not mutually exclusive. Perhaps, in the end, some combination of them will prove most effective. Mobility in and of itself should no longer be a scapegoat. We must look beyond mobility to understand childrens' performance in school.

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